

Reply To: 3420

Date: September 6, 1988

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Subject: Dwarf Mistletoe in the Heart Bar Campground
(Rept. No. 88-21)

To: Forest Supervisor, San Bernardino National Forest

On 16-17 August 1988, Plant Pathologists Melissa Marosy and Susan Frankel visited the San Gorgonio District of the San Bernardino National Forest. The primary objective of the visit was to assist the District in identifying areas that would benefit from dwarf mistletoe suppression. With the aid of John Palermo, Recreation Officer for the San Gorgonio Ranger District, Heart Bar Campground was identified as such an area.

Dwarf mistletoe was evaluated in Heart Bar in 1979, and deemed a problem serious enough to pose a threat to long-term thrift and survival of the affected trees (see report from Forest Insect and Disease Management (FIDM) to the Forest Supervisor dated December 17, 1979). A survey of the campground was subsequently conducted, and potential methods for control were presented (see letter to the Forest Supervisor dated August 8, 1980). Guidelines to assist in deciding how to treat individual trees were provided. It was advised that the dwarf mistletoe suppression operations should be coordinated with proposed campground changes or construction.

A suppression project was initiated in March 1981. Objectives of the project were to decrease incidence of dwarf mistletoe in the campground and adjacent area and to increase the vigor of both young and old growth pine, while favorably influencing the recreational character of the campground. A biological evaluation conducted by Forest Pest Management (FPM) personnel in 1987, at the request of the District, determined that the primary suppression effort in 1981 and several later small-scale entries had significantly eliminated the dwarf mistletoe infestation in most of the campground (see Report No. 87-13). Certain portions of the pre-existing campground area or the proposed expansion area were not treated, however, and harbored severe infestations. It was suggested that dwarf mistletoe suppression would best be implemented before the campground renovation was completed, and alternatives for implementation of such a project were presented.

During their recent visit, Melissa Marosy and Susan Frankel, assisted on 17 August by Ernest Del Rio, Forest Silviculturist, conducted a survey for incidence and severity of dwarf mistletoe on Jeffrey pine in the northwestern portion of proposed Loop C of the campground. This region had been identified in 1987 as being severely infested. The results of this survey follow.

OBSERVATIONS

Approximately 150 trees of all age and size classes (excepting those less than 1 inch DBH) with some level of dwarf mistletoe infection were surveyed. Trees were rated according to the Hawksworth 6-point dwarf mistletoe rating system, and a specific treatment (pruning, removal) recommended. Trees without dwarf mistletoe infections were not recorded; however, it is estimated that approximately 50% of the trees in the area surveyed have some level of dwarf mistletoe. Of these infected trees, approximately 70% have a dwarf mistletoe rating of 1 or 2, 25% 3 or 4, and 5% 5. No tree was given a dwarf mistletoe rating of 6.

The vegetative goal set forth for this area by Ernest del Rio in December 1987 is "to maintain a predominantly natural-appearing vegetation environment that is characterized by a mixed conifer stand where all age classes are represented and random isolated openings covered by low-lying shrubs and grasses are present". Although few trees in the surveyed area are seriously infected, many of the infected understory trees harbor bole infections or infections high in the crown, where the infection will have the greatest effect on tree vigor. Chronic annual mortality in the stand can be expected as the dwarf mistletoe in these trees intensifies. Increased levels of mortality can be anticipated after drought years, such as we are currently experiencing, due to additional stress to the trees. Spread of the parasite to uninfested trees both within and beyond currently affected areas of the campground can be expected to continue. Thus, without dwarf mistletoe suppression efforts, long-term maintenance of a natural-appearing uneven-aged stand may not be possible.

SUMMARY

Because of the high recreational value of the Heart Bar Campground, a dwarf mistletoe suppression project in this area is warranted to increase the health and vigor of the existing stand and thereby maintain a desirable recreation environment. Since the campground is currently undergoing renovation, the current time would be ideal for such a project. Ernest Del Rio and John Palermo are in agreement that dwarf mistletoe control efforts are needed and desired at this time in Heart Bar Campground, and both are willing to work with FPM to implement and complete a successful dwarf mistletoe suppression project in this area. Sufficient suppression funds are expected to be available from FPM for FY 89 to implement such a project (available for use October 1).

At the present time, we suggest consideration of the following alternatives:

(1) Remove all trees with a dwarf mistletoe rating of 5 or 6, and prune witches brooms from trees with lower ratings. This option would involve removing about 5% of the trees in the most severely affected areas (see Observations), and would reduce stress to those trees with brooms. It would maintain the current character of both the overstory and understory. This option would not curtail intensification of the parasite within currently infested trees, nor would it significantly reduce spread of the parasite to uninfested trees within or beyond currently affected areas.

(2) Remove or prune affected trees according to the guidelines listed in the enclosed document, "Dwarf Mistletoe Control in Recreation Areas". This

option would entail the removal of a number of trees in some heavily infested areas (38% of infected trees in the surveyed area), and pruning of remaining affected trees. It would increase vigor in the remaining trees and significantly reduce the potential for spread of the parasite. It would ensure an uninfested understory to eventually replace current overstory trees which have succumbed or will succumb to dwarf mistletoe or other factors. It would create small openings which may be allowed to revegetate naturally or be planted to species not susceptible to the parasite. The overall effect of implementing this option would be entirely consistent with the vegetative management goal set forth for this area.

To pursue dwarf mistletoe suppression in the Heart Bar Campground, the following must be submitted by the District to FPM for approval:

1. a project proposal, Form FS-3400-2.
2. an environmental assessment that includes project objectives, a copy of this evaluation, a project work plan, a benefit-cost analysis, and a post-suppression evaluation plan.

At your request, the FPM Staff is available to provide whatever assistance or additional information they can for satisfying these requirements, including preparation of a project proposal, training of survey crews, and developing plans for post-suppression evaluations.

If there are any questions, please contact Melissa Marosy (415-556-6940).

JOHN NEISESS
Program Leader for Forest Pest management

Enclosures

cc: Gay Almquist, Resource Officer, San Bernardino N.F.
Ernest Del Rio, Forest Silviculturist, San Bernardino N.F.
John Palermo, San Geronio R.D.



FOREST PEST MANAGEMENT

Pacific Southwest Region

Report No. 88-22

3420 Pest Management Evaluation
September 7, 1988

BIOLOGICAL EVALUATION OF WHITE ROCK PICNIC AREA, SANTA BARBARA RANGER DISTRICT, LOS PADRES NATIONAL FOREST

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ABSTRACT

A brief visit to White Rock Picnic Area is described. Defects in live oaks, the dominant vegetation, sycamore anthracnose and true mistletoe were the problems observed. Damage or injury from insects were not found. A general approach to hazard reduction is discussed.

INTRODUCTION

During the afternoon of May 24, we accompanied Dave Schreiner, silviculturist on the Los Padres National Forest, and John Bridgewater, Santa Barbara Ranger District, to the White Rock Picnic Area for a brief tour to evaluate pest problems.

OBSERVATIONS

White Rock is a newly refurbished picnic area of intermediate size within the Santa Ynez Recreation Area. Its location on the south bank of the Santa Ynez River and close proximity to large population centers assure a high level of use. Vegetation is characteristic of the Coastal Canyon type of the Southern Oak Woodland. Live oaks (*Quercus agrifolia*) predominate, but there are other oak species, numerous sycamores and a few conifers, some of which are exotic. Exotic hardwoods such as black locust and eucalyptus remain from past residential use of the site. Shrub vegetation is sparse, and grasses compose the low vegetation.

Many oaks are large and often exhibit numerous bole and branch scars and holes indicative of decay. Twig dieback occurs on those oaks impacted by new construction. True mistletoe infections are common in the oaks and sycamores, but not so abundant as to be causing dieback and mortality. Witches' brooms are common in the sycamores -- the result of chronic infections and dieback from sycamore anthracnose and the subsequent development of a cluster of twigs around a common point.

DISCUSSION

Because the picnic area was upgraded during the winter, use patterns were not established prior to opening for the Memorial Day weekend. Once these have been established, the high frequency of limb and trunk rot in the oaks and sycamores will require a hazard evaluation of trees in the picnic area. Each tree should be inspected and a judgement made of its structural soundness. Some of the large sweeping limbs may need removal or some form of bracing. The planting of replacements in anticipation of tree removal may be necessary. Decisions on retention and removal may run counter to the native plant philosophy and require the retention of some exotics for shade. Fast growing exotics could fill the interim between removal and replacement by the more slowly growing natives. Removal of true mistletoe infections would be beneficial should these seem to be reducing tree vigor.

The abundance of symptoms and signs of anthracnose infections indicates that temperatures in the spring are almost annually favorable for disease development. In spite of this, the sycamores have reached large size. Manipulation of the vegetation can be utilized to alter the severity of the disease or frequency of injury. Anthracnose disease of sycamores can be prevented or reduced by substituting London plane, a species resistant to anthracnose, for the more susceptible sycamores.

MANAGEMENT ALTERNATIVES

1. NO ACTION. Vegetation management for the long-term benefit of the picnic area would not be accomplished. There is a potential for property damage or human injury when hazardous trees fail.
2. VEGETATION MANAGEMENT. This alternative requires the development of a vegetation management plan. This in turn requires the establishment of objectives for the area, which would include the desired future condition and appearance of the vegetation. Vegetation management is a long-term commitment and cannot be accomplished through one-time events. Topics to be considered include species composition, stocking levels, screening species, durability, regeneration and pest management actions.

PEST-SPECIFIC MANAGEMENT ACTIONS

1. Annosus Root Disease. There are few conifers in the picnic area and no sign of infection by Heterobasidion annosum (Fomes annosus). Should any pines

be removed, the stumps should be treated with borax (sodium tetraborate decahydrate, EPA

Reg. No 1624-94) to prevent infection by the fungus. Annosus root disease can be very disruptive to management plans.

2. True Mistletoe. True mistletoes can be removed from hardwoods by pruning the infected branch below the infection. This will improve the vigor of heavily infected trees by removing these "water parasites". Trees with numerous infections might be disfigured if a large number of plants were removed in this manner.

Another approach is to remove the mistletoe plant flush with the branch and wrap the point of infection with black polyethylene to exclude light. Without light, the mistletoe may die within a year or two. Removing mistletoe plants without wrapping will retard mistletoe development, but new shoots will appear after each removal.

3. Hazard Tree Management¹. A hazardous tree management program initiated in the picnic area would have the objective of reducing the number of tree hazards to an acceptable level, thereby reducing the probability of property damage and risk to public safety. Such a program would require an initial inspection to determine the locations of hazardous trees and to prescribe any actions necessary for hazard reduction. In most cases, this would be tree removal, but other measures, such as topping, pruning, bracing, and relocating improvements, may be appropriate depending on the specific situation. This inspection and any actions taken should be documented.

Once initiated in the area, a hazardous tree management program should be a continuous process with periodic re-inspections and subsequent actions, when necessary. These activities should be documented, both for legal purposes and for determining if changes in hazard are occurring in individual trees.

The results of a hazardous tree management program on the vegetative characteristics in the picnic area will depend on the levels of hazard deemed acceptable and the intensity of activity undertaken. An active program in many areas can result in a substantial loss of tree cover because of the number of hazardous trees. A greater vegetative component could be retained, at least for the short-term, by being conservative in selecting trees for removal for hazard reduction.

1. DeNitto, G., J. Kliejunas, B. Roettgering, and D. Schultz. 1988. Biological Evaluation of Pest Conditions in Developed Recreation Sites, Whiskeytown Unit, Whiskeytown-Shasta-Trinity National Recreation Area. USDA - Forest Serv., Pac. SW Reg., St. & Priv. Forestry, Forest Pest Mgt. Rept. No. 88-10. 19 p.